



System And Method For Detection Of  
Emitter Signals Using Multiple Intercept  
Rules  
GOUNALIS, Anthony J.  
Serial No.: 10/675,542  
Docket No.: L0562.70038US00

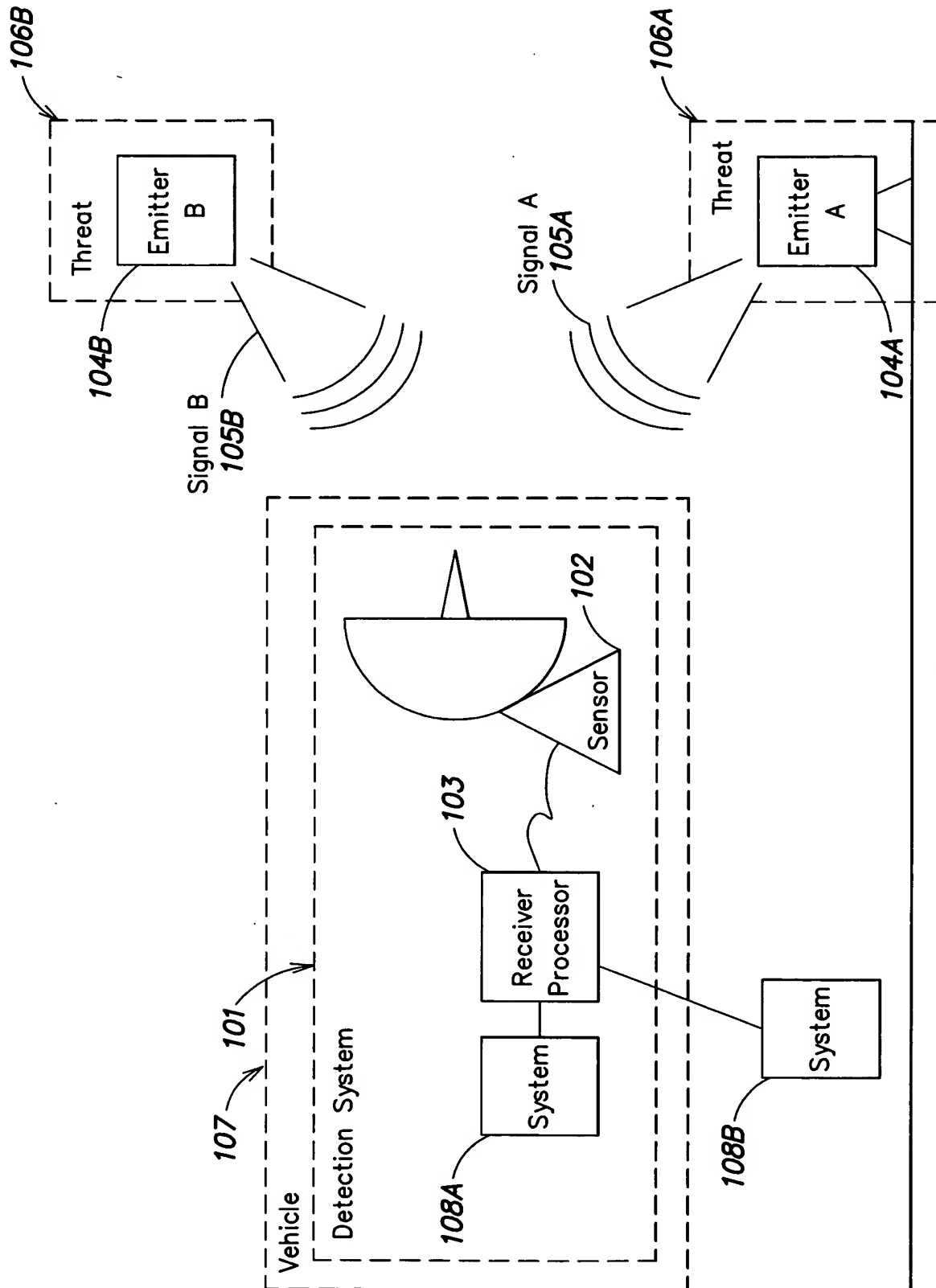


FIG. 1

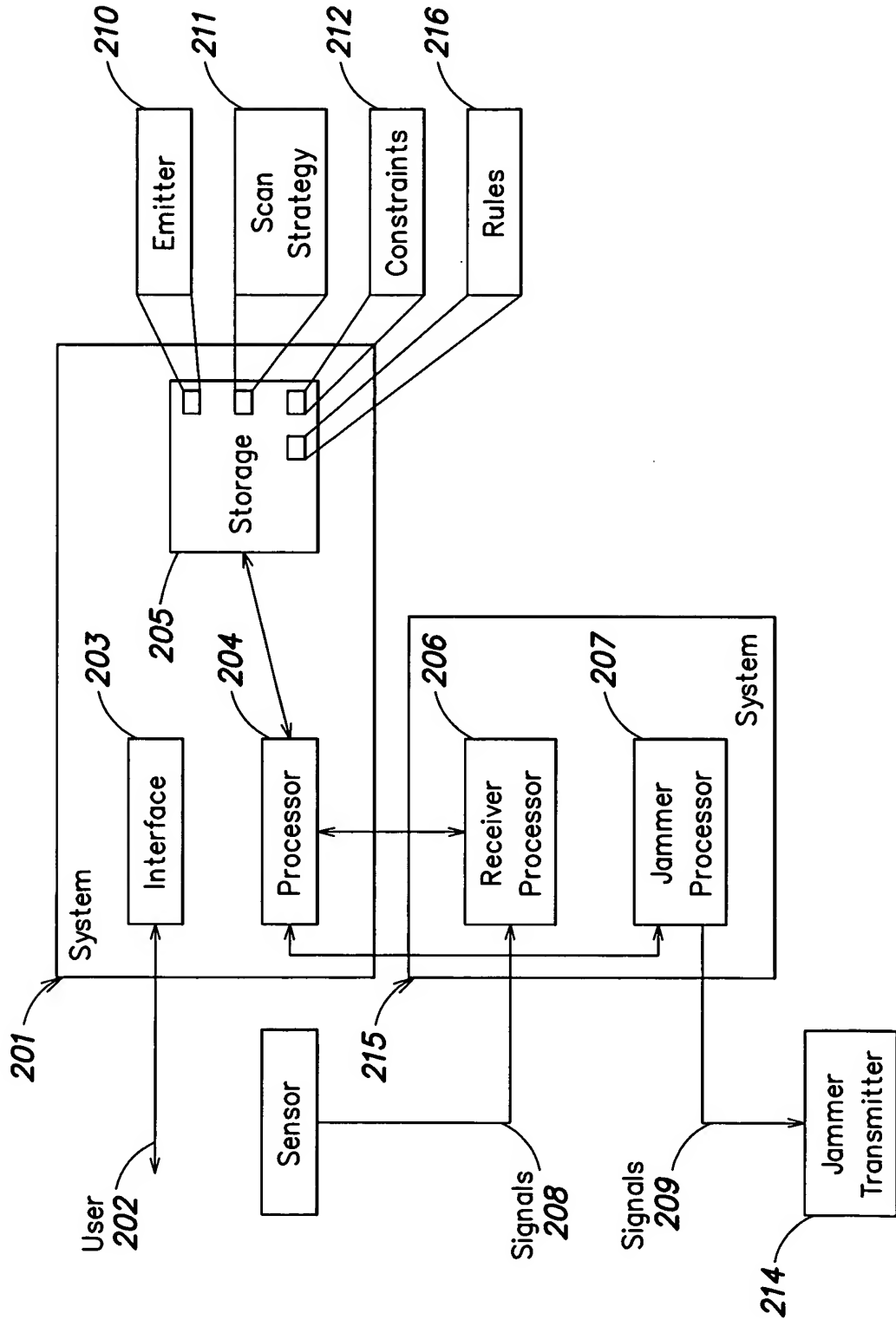
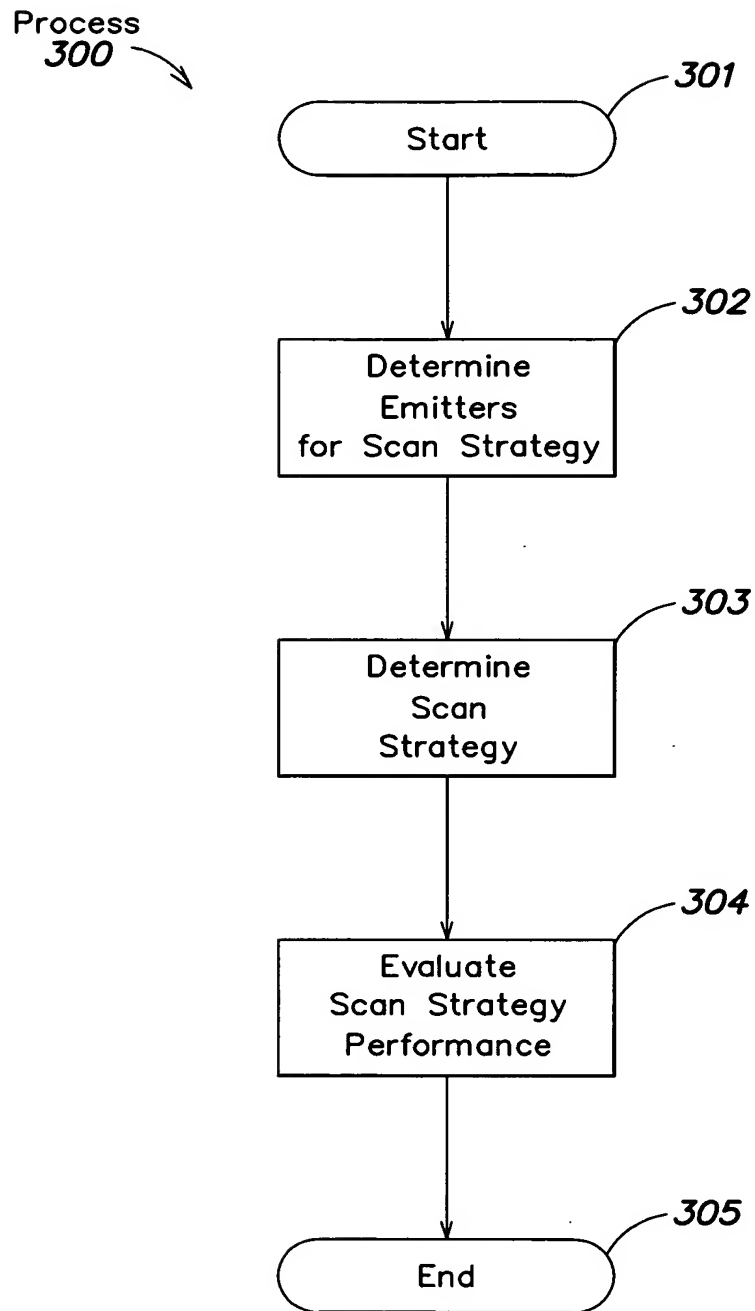


FIG. 2



**FIG. 3**



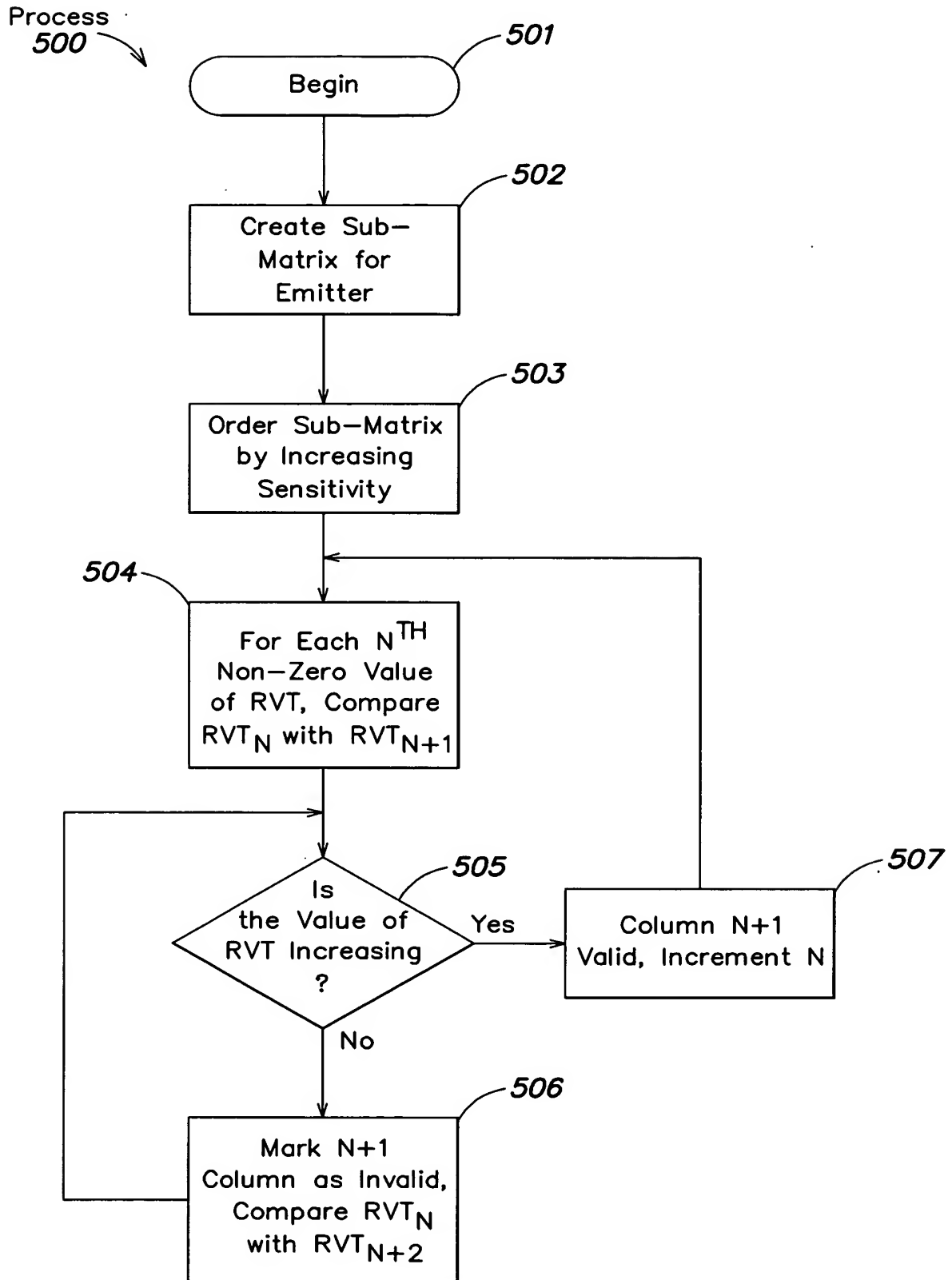
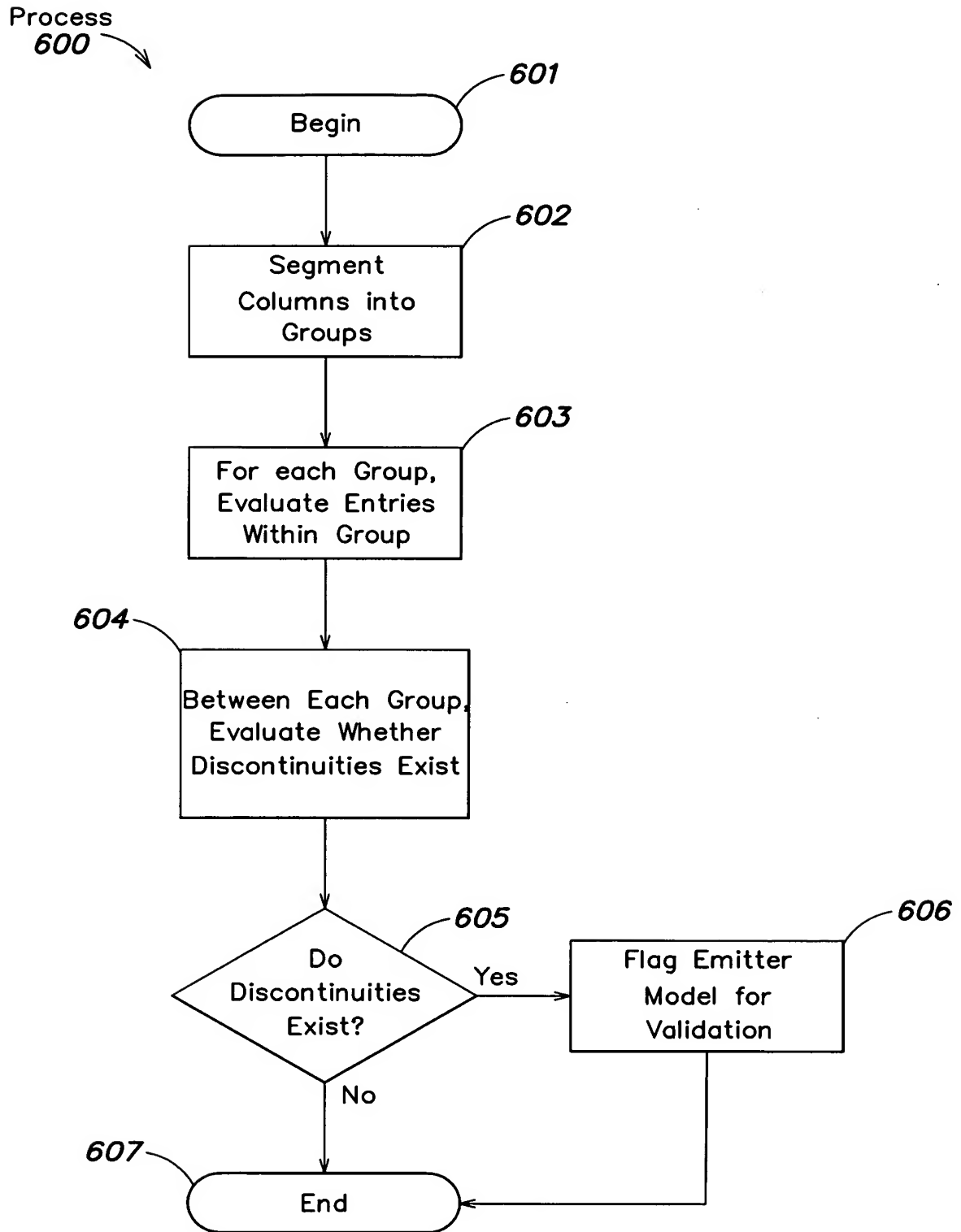


FIG. 5



**FIG. 6**

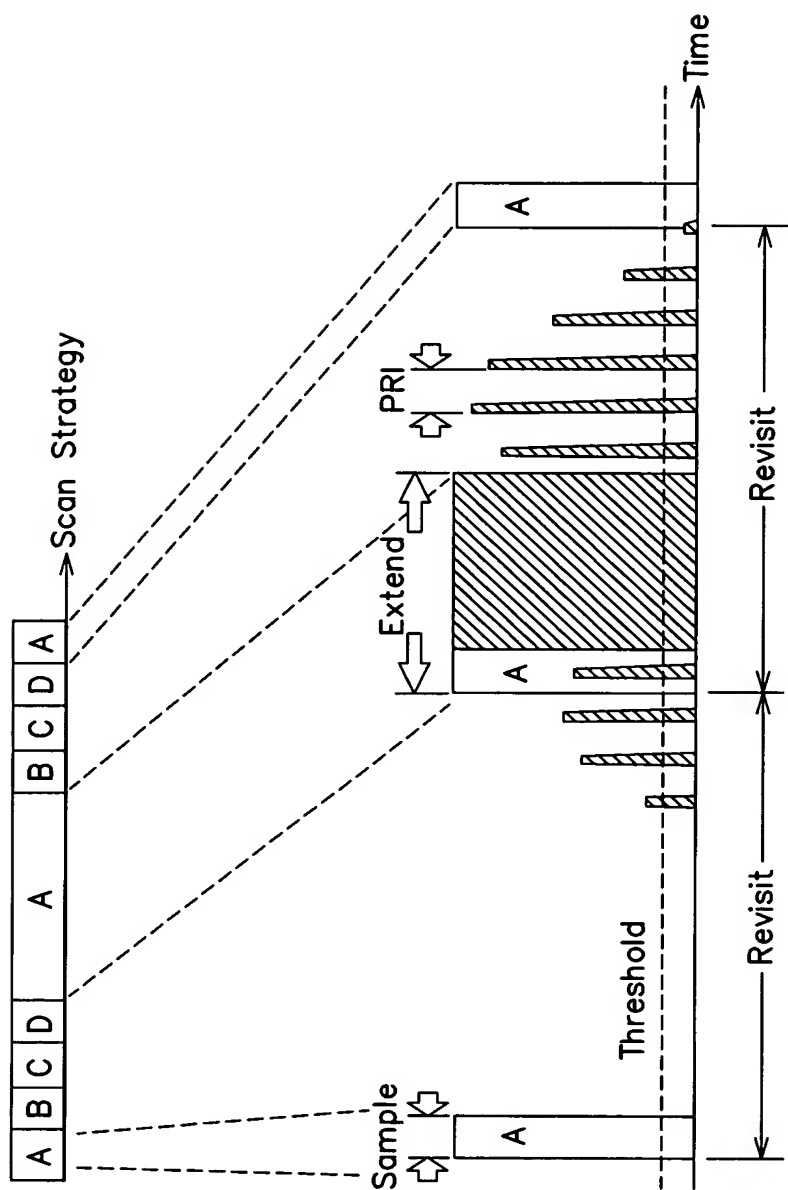
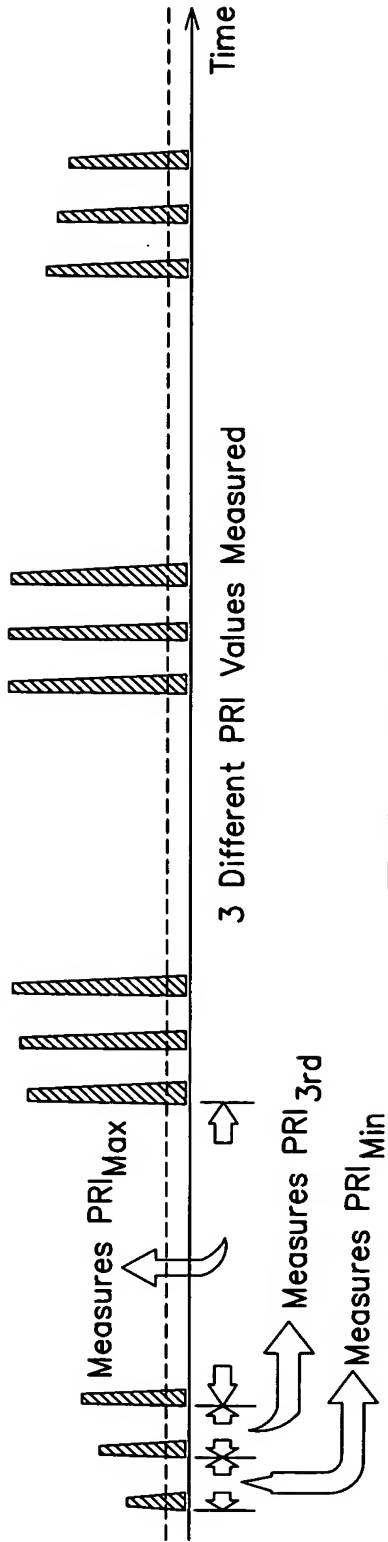


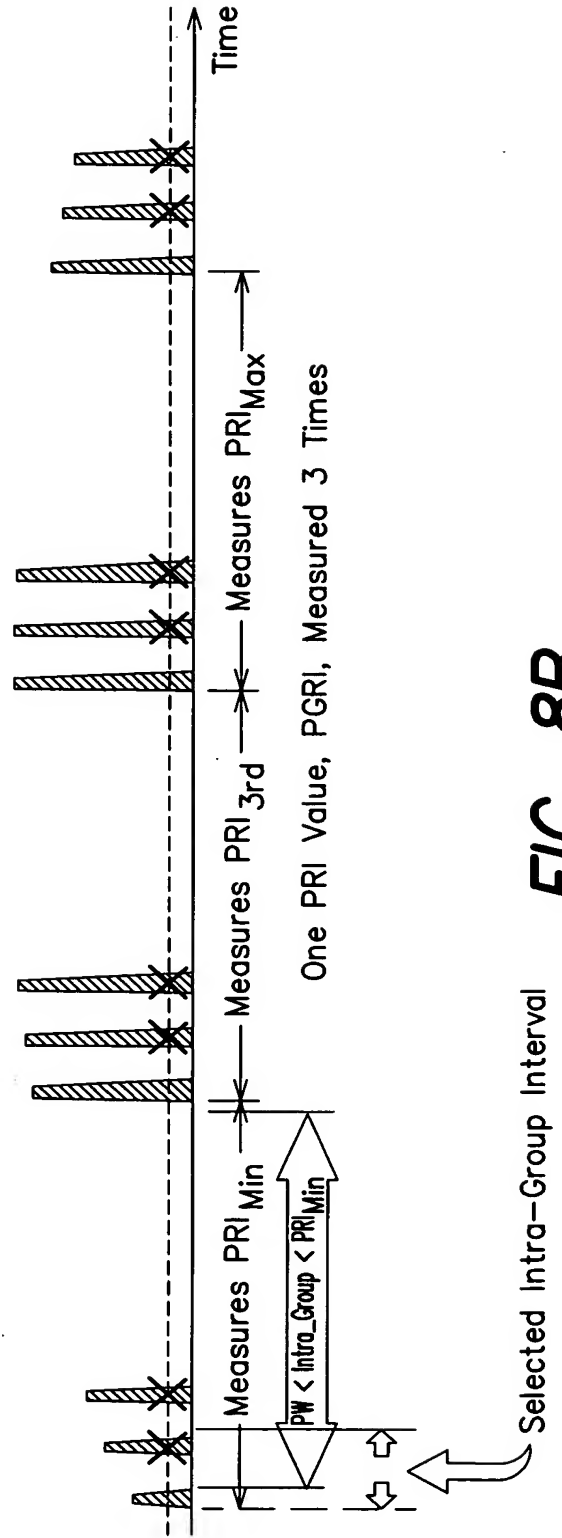
FIG. 7

NO PULSE GROUPING LOGIC:



**FIG. 8A**

WITH PULSE GROUPING LOGIC:



**FIG. 8B**



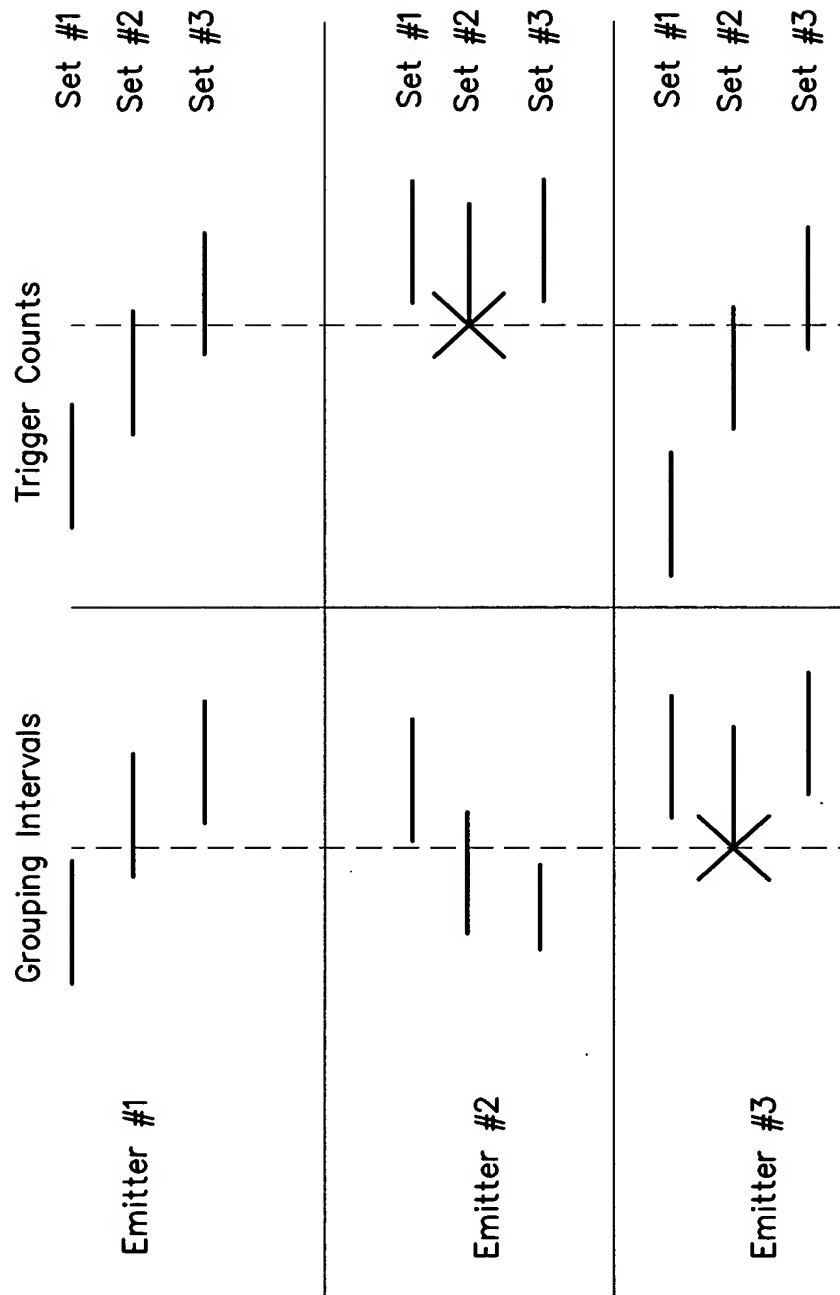
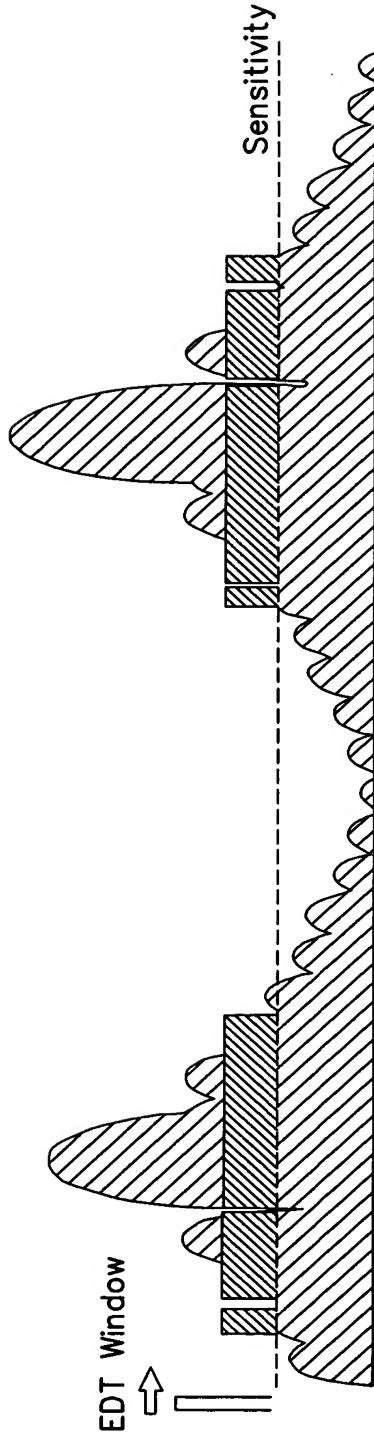
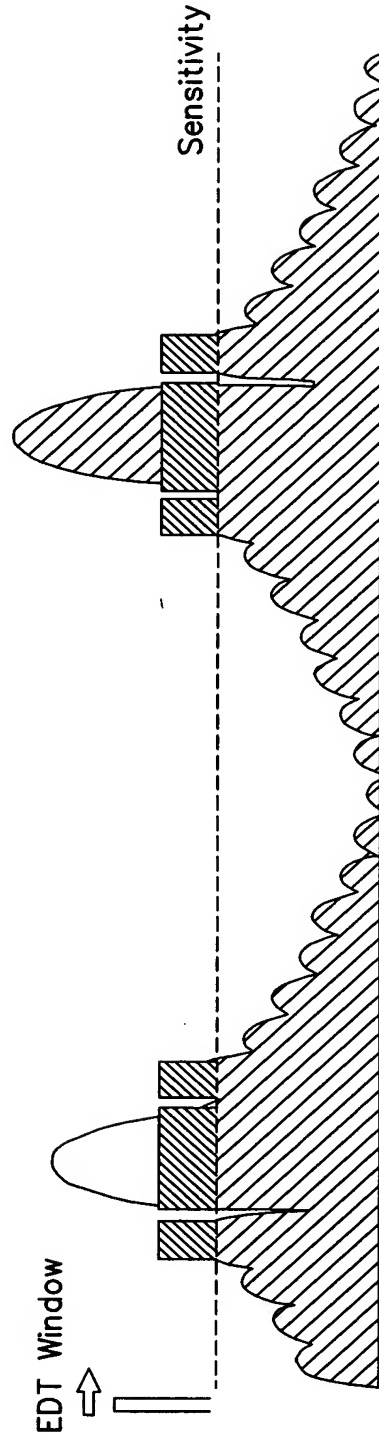


FIG. 9



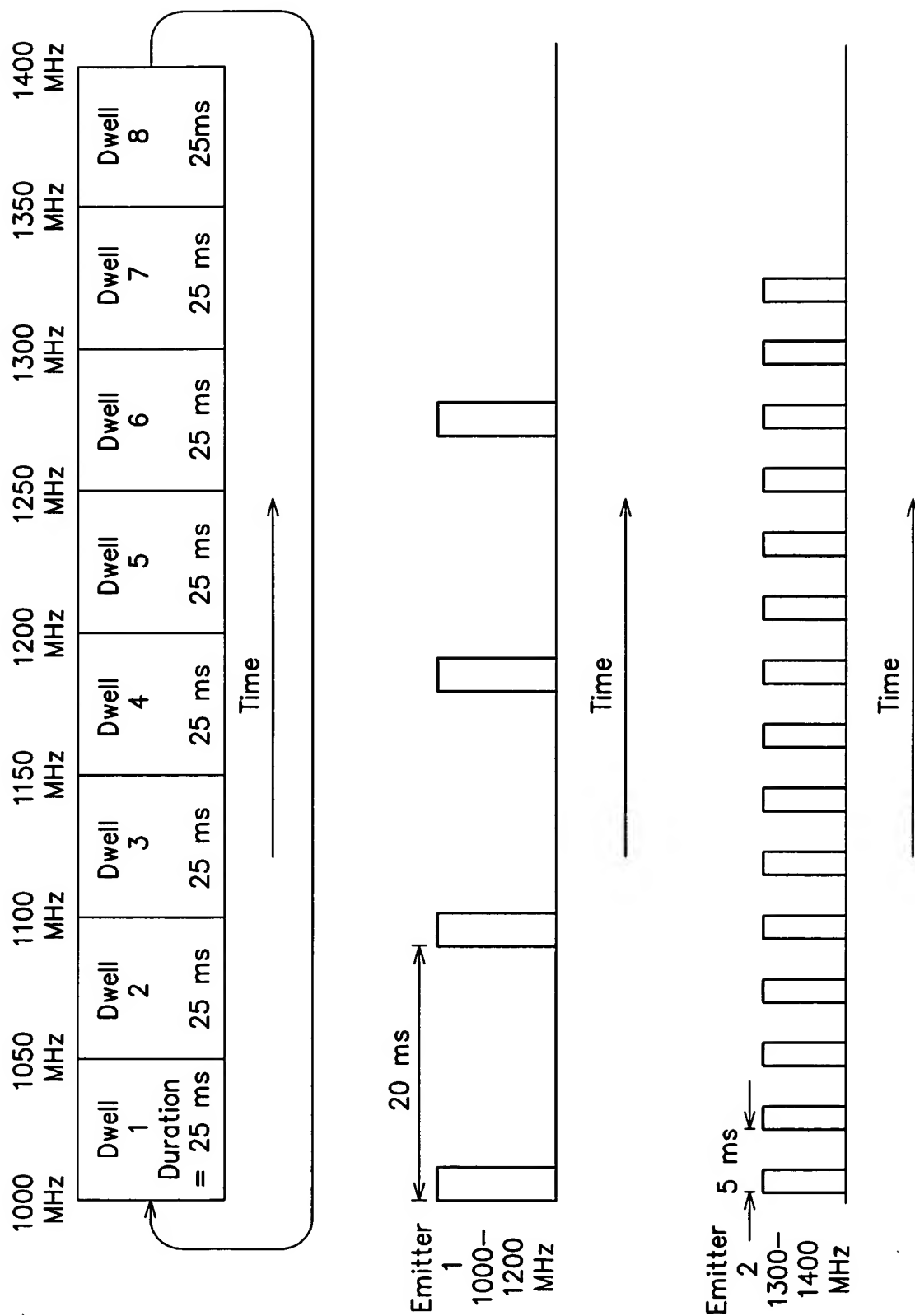
Discrete Illuminations (TIBS)

**FIG. 10A**



Discrete Illuminations (TIBS)

**FIG. 10B**



**FIG. 11**

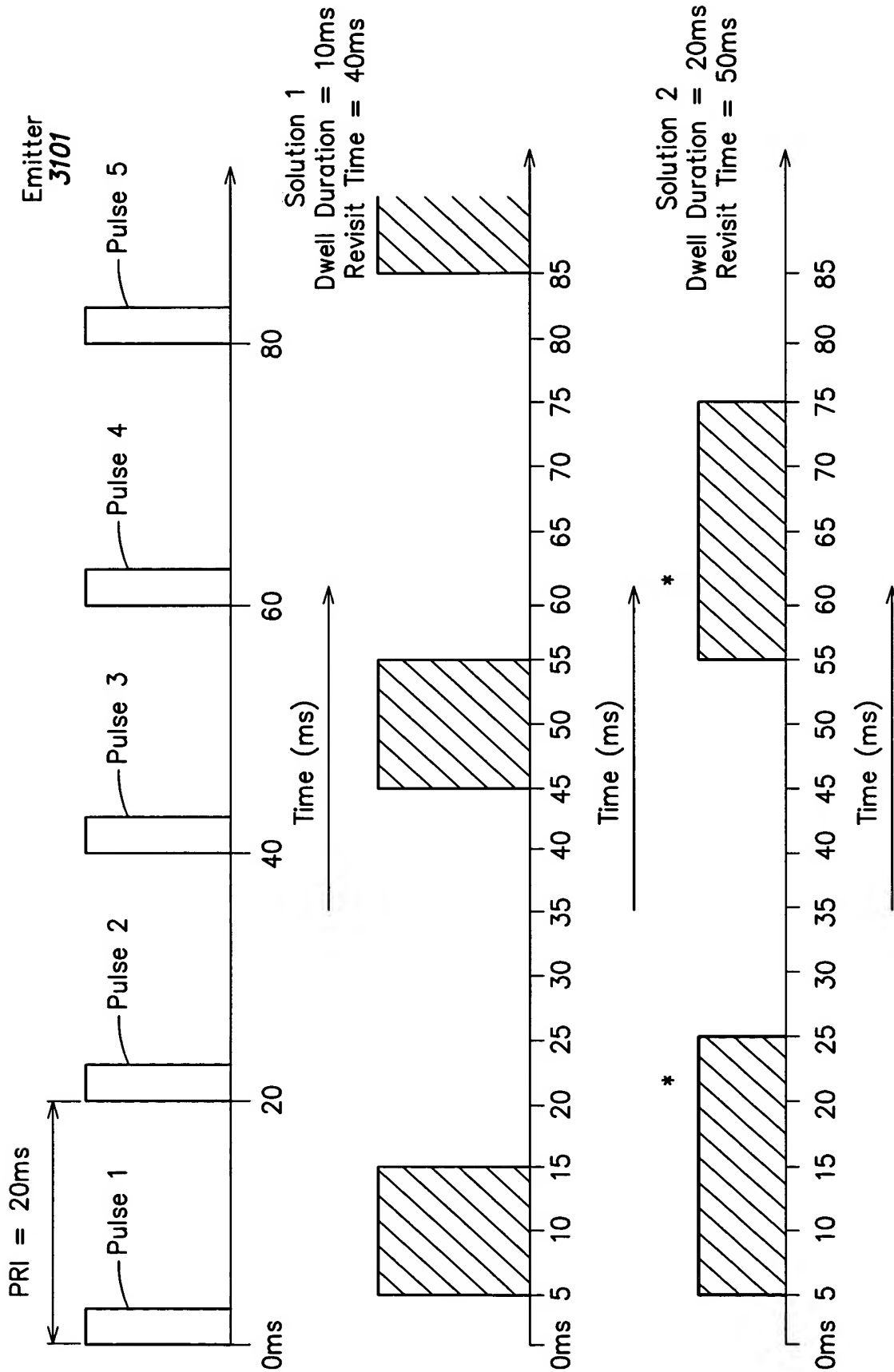
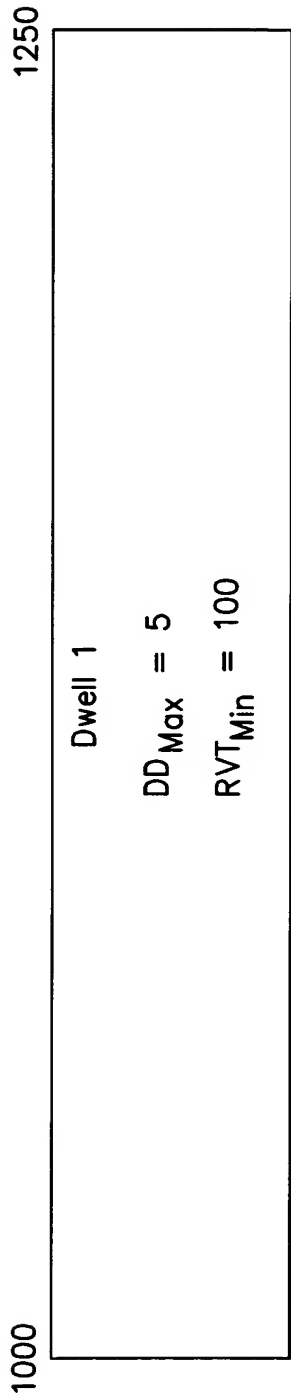


FIG. 12

4000

Emitter Name	Detecting Method 1 250MHz IF/ 15MHz VBW RVT	Detecting Method 2 30MHz IF/ 15MHz VBW RVT	RF Min (MHz)	RF Max (MHz)	Min MDT (ms)
E1	100 ms	650 ms	1000	1300	3
E2	120 ms	780 ms	1220	1350	5
E3	110 ms	330 ms	1510	1810	2
E4	130 ms	390 ms	1730	1860	4

FIG. 13



Solution 1

$Cost = 5/100 = .05$

1000	1030	1060	1090	1120	1150	1180	1210	1240	1270
Dwell 1	Dwell 2	Dwell 3	Dwell 4	Dwell 5	Dwell 6	Dwell 7	Dwell 8	Dwell 9	
$DD_{Max}$ 3	$DD_{Max}$ 3	$DD_{Max}$ 3	$DD_{Max}$ 3	$DD_{Max}$ 3	$DD_{Max}$ 3	$DD_{Max}$ 3	$DD_{Max}$ 5	$DD_{Max}$ 5	
$RVT_{Min}$ 650	$RVT_{Min}$ 650	$RVT_{Min}$ 650	$RVT_{Min}$ 650	$RVT_{Min}$ 650	$RVT_{Min}$ 650	$RVT_{Min}$ 650	$RVT_{Min}$ 650	$RVT_{Min}$ 650	

Solution 2

Total Cost

$Cost + Cost + Cost + Cost + Cost + Cost + Cost + Cost + Cost = 31/650 \approx .048$

$3/650 \quad 3/650 \quad 3/650 \quad 3/650 \quad 3/650 \quad 3/650 \quad 3/650 \quad 5/650 \quad 5/650$

FIG. 14A

1510

1760

Dwell 1		
DD <sub>Max</sub> = 4 ms		
RVT <sub>Min</sub> = 330 ms		

Solution 1

$$\text{Cost} = 4/330 = .012$$

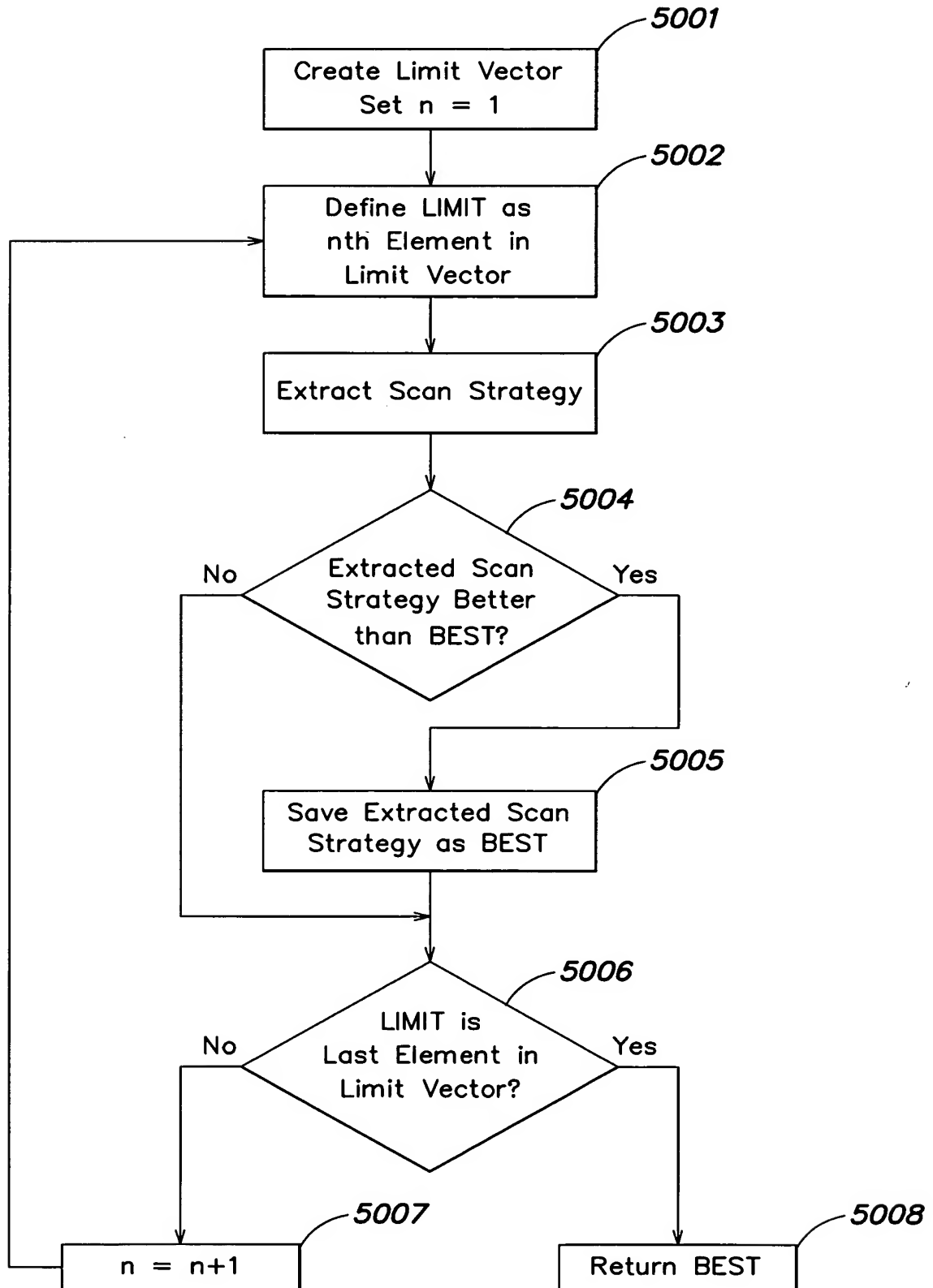
1510      1540      1570      1600      1630      1660      1690      1720      1750      1780

Dwell 1	Dwell 2	Dwell 3	Dwell 4	Dwell 5	Dwell 6	Dwell 7	Dwell 8	Dwell 9
DD <sub>Max</sub> 2	DD <sub>Max</sub> 2	DD <sub>Max</sub> 2	DD <sub>Max</sub> 2	DD <sub>Max</sub> 2	DD <sub>Max</sub> 2	DD <sub>Max</sub> 2	DD <sub>Max</sub> 4	DD <sub>Max</sub> 4
RVT <sub>Min</sub> 330 ms	RVT <sub>Min</sub> 330 ms	RVT <sub>Min</sub> 330 ms	RVT <sub>Min</sub> 330 ms	RVT <sub>Min</sub> 330 ms	RVT <sub>Min</sub> 330 ms	RVT <sub>Min</sub> 330 ms	RVT <sub>Min</sub> 330 ms	RVT <sub>Min</sub> 330 ms

Solution 2

$$\text{Cost} + \frac{\text{Cost}}{2/330} + \frac{\text{Cost}}{2/330} + \frac{\text{Cost}}{2/330} + \frac{\text{Cost}}{2/330} + \frac{\text{Cost}}{2/330} + \frac{\text{Cost}}{2/330} + \frac{\text{Cost}}{4/330} + \frac{\text{Cost}}{4/330} = \frac{22}{330} = .06$$

FIG. 14B



**FIG. 15**



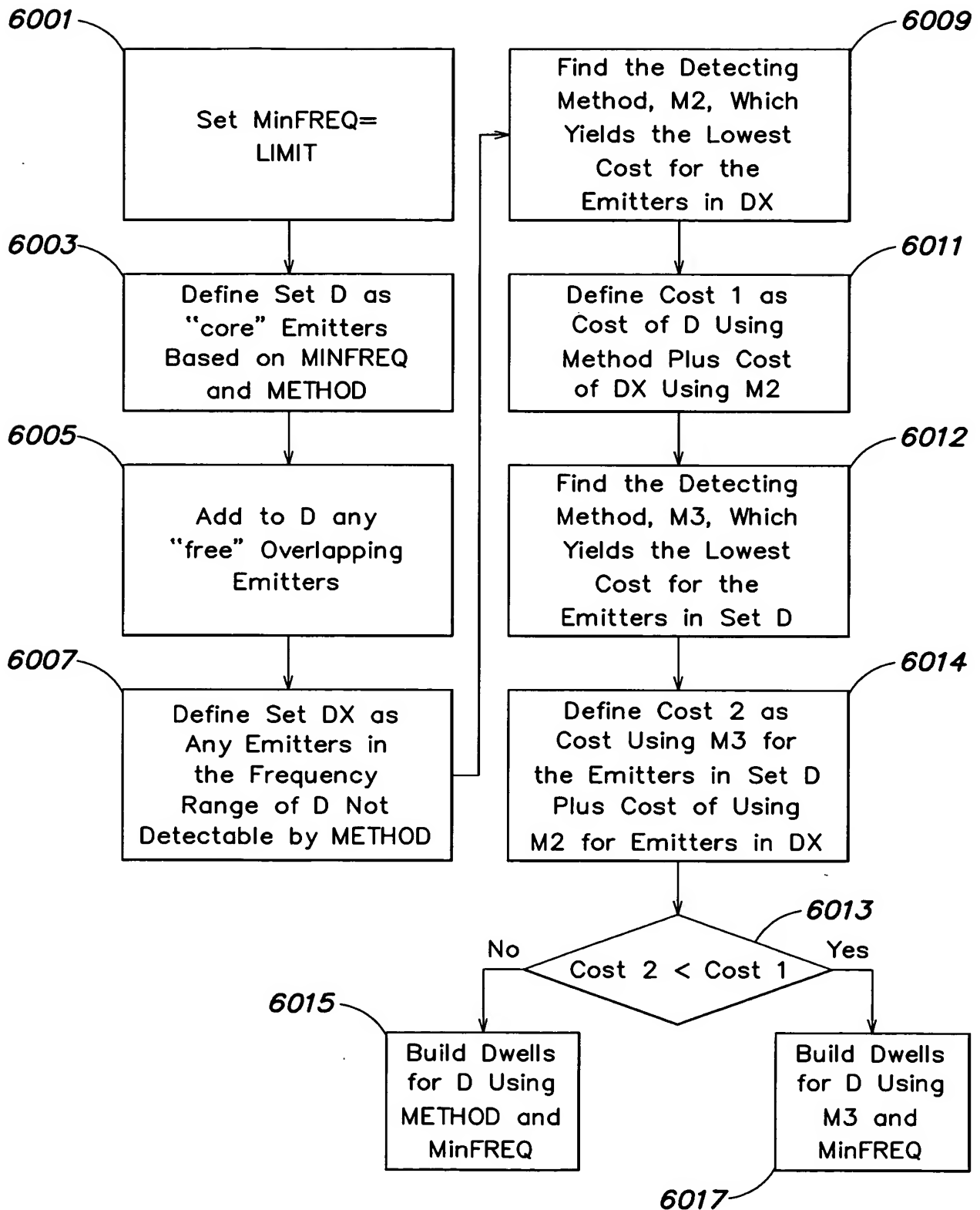
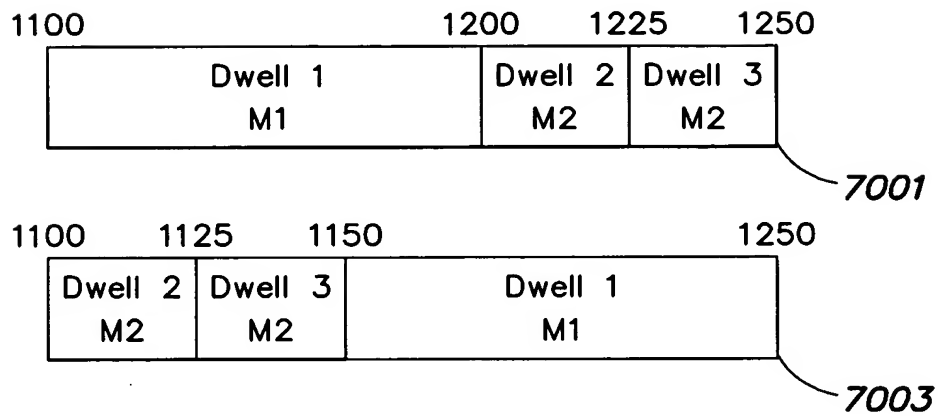


FIG. 16

Name	RF Min	RF Max
E1	1100	1200
E2	1150	1250



**FIG. 17**

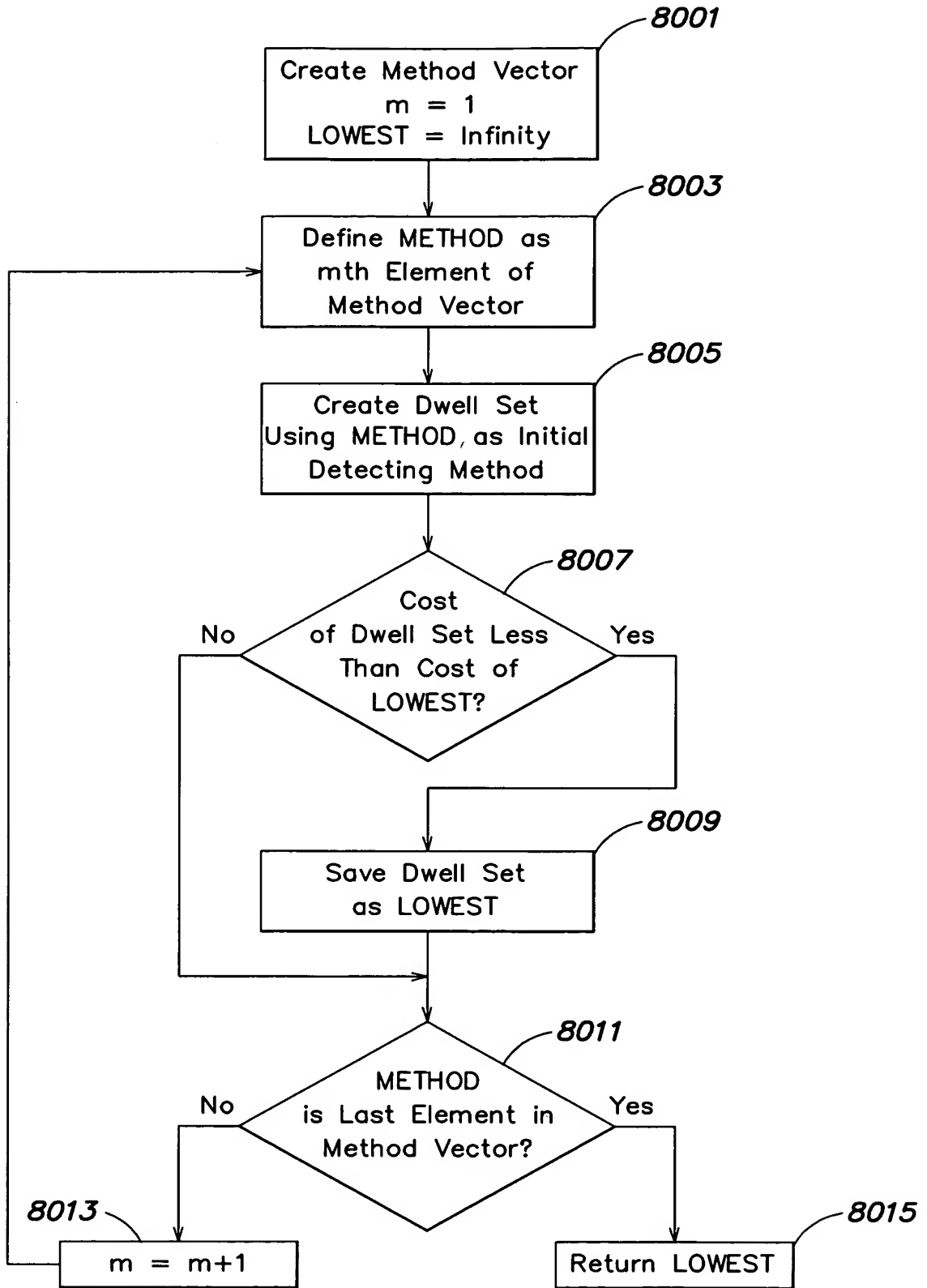


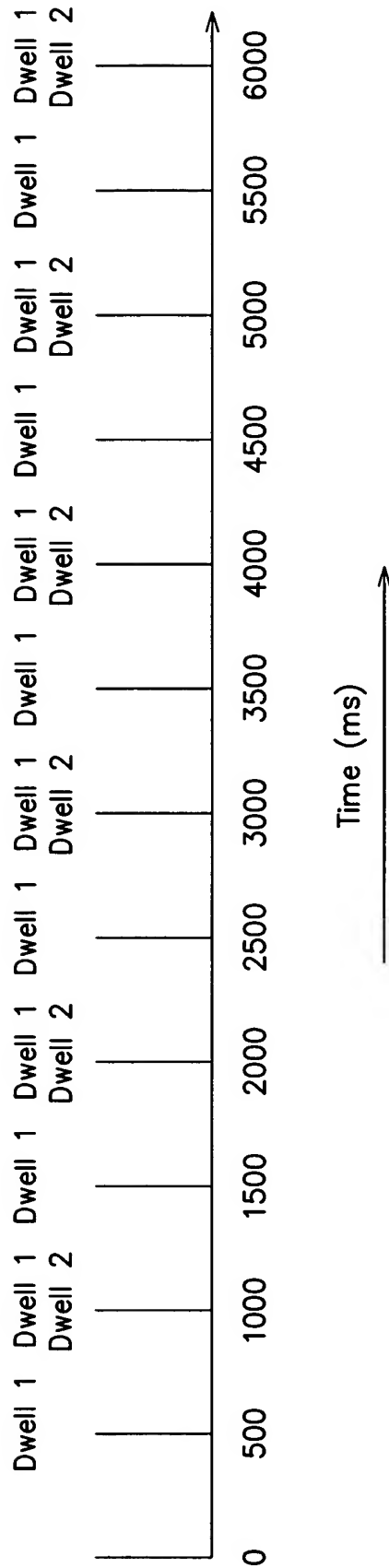
FIG. 18

Emitter	Dwell Duration (ms)	Revisit Time (ms)
Emitter 1	1	500
Emitter 2	2	1200

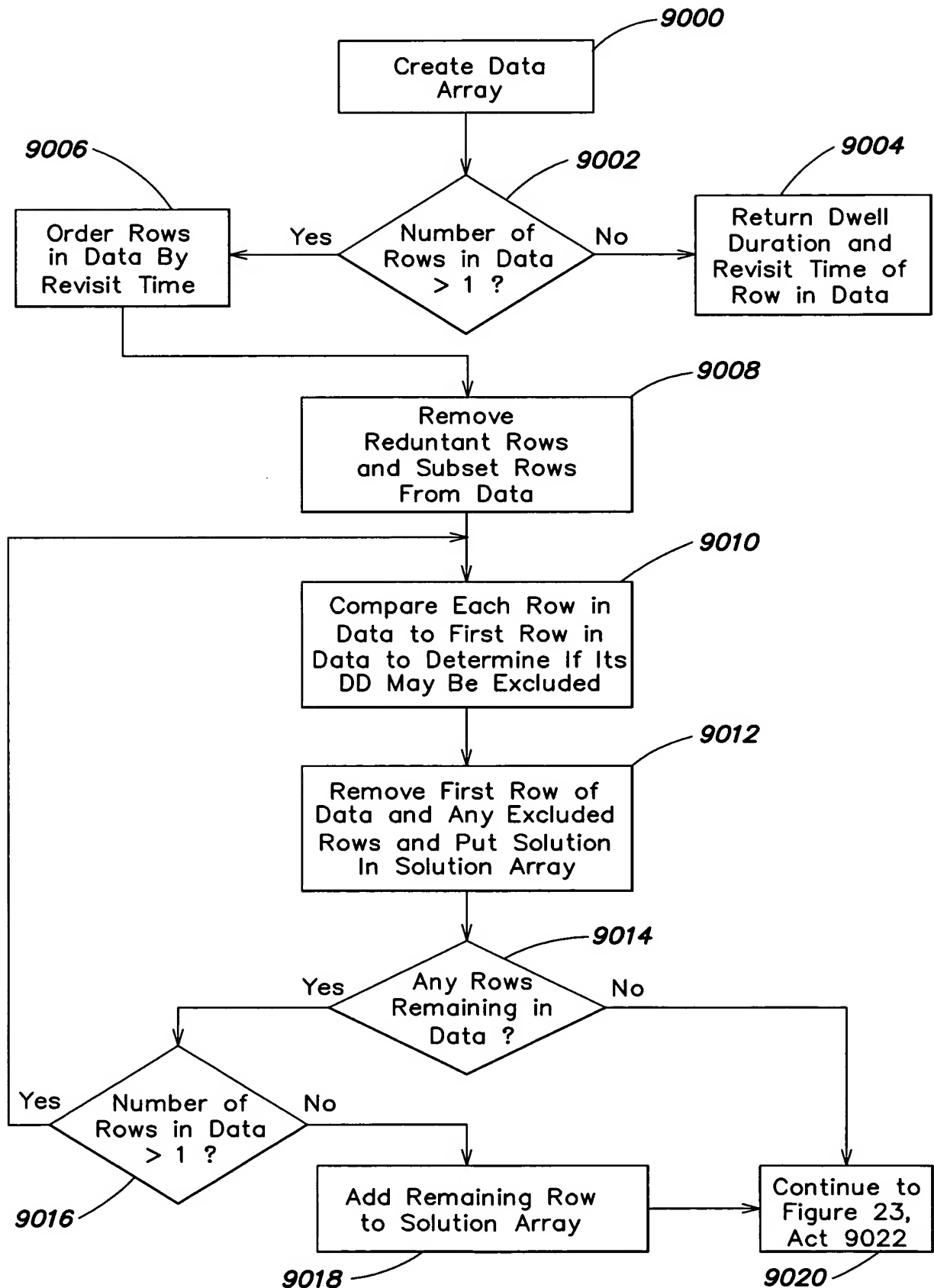
***FIG. 19***

Emitter	Dwell Duration (ms)	Revisit Time (ms)	Cost
Emitter 1	1	500	.002
Emitter 2	5	1000	.005

***FIG. 20***



**FIG. 21**



**FIG. 22**

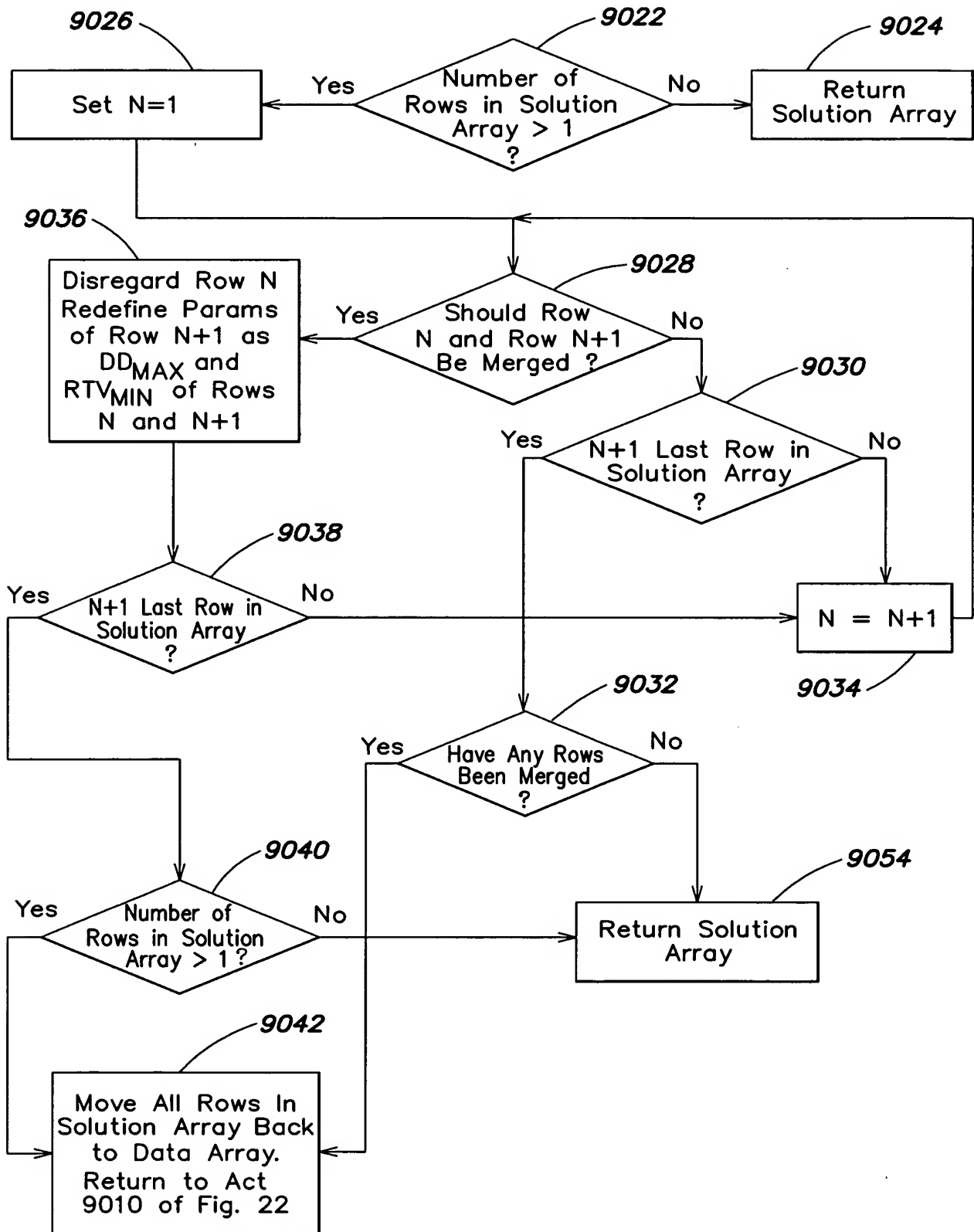


FIG. 23

9044

Data			
MDT	EDT	RVT	
1	7	500	9051
2	9	700	9052
2.3	11	800	
3	19	2000	
3.05	17	2868	

9044

Data			
MDT	EDT	RVT	
1	7	500	
2	9	700	
2.3	11	800	9048
0.5	3.5	1000	9049
3	19	2000	9050
3	19	2000	
3.05	17	2868	

9044

Data			
MDT	EDT	RVT	
3.05	17	2868	
3	19	2000	
3	19	2000	
1	7	500	
2	9	700	
2.3	11	800	
0.5	3.5	1000	

FIG. 24C

FIG. 24B

FIG. 24A



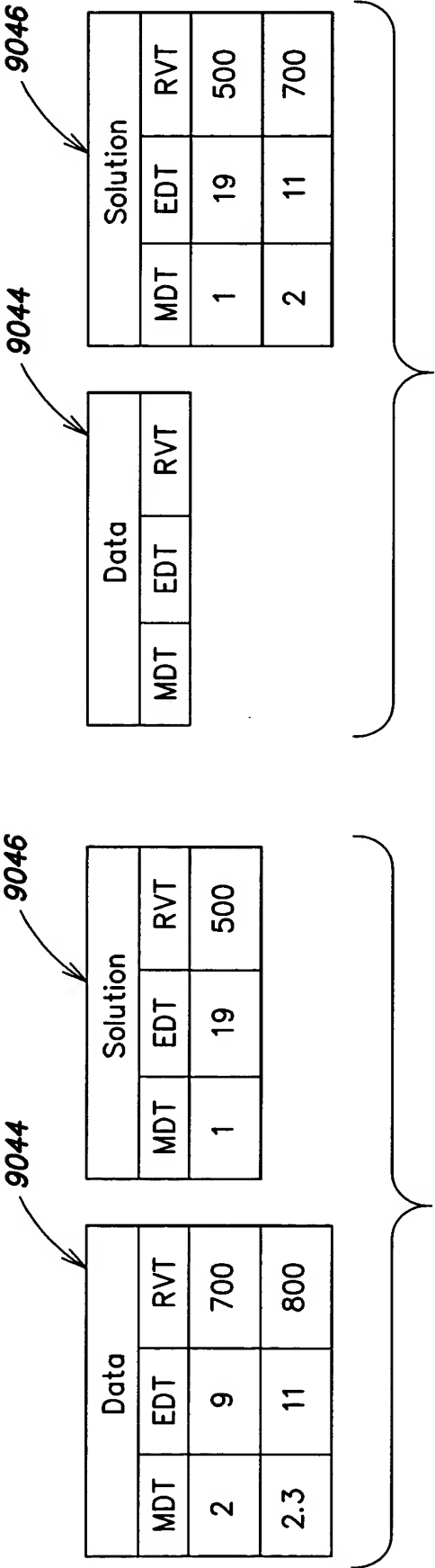


FIG. 24E

FIG. 24D

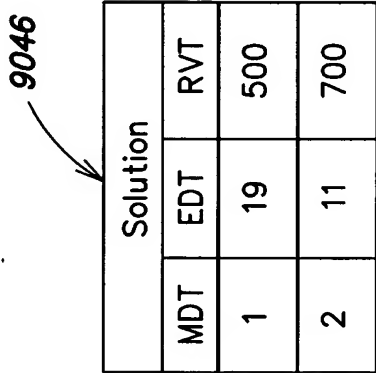
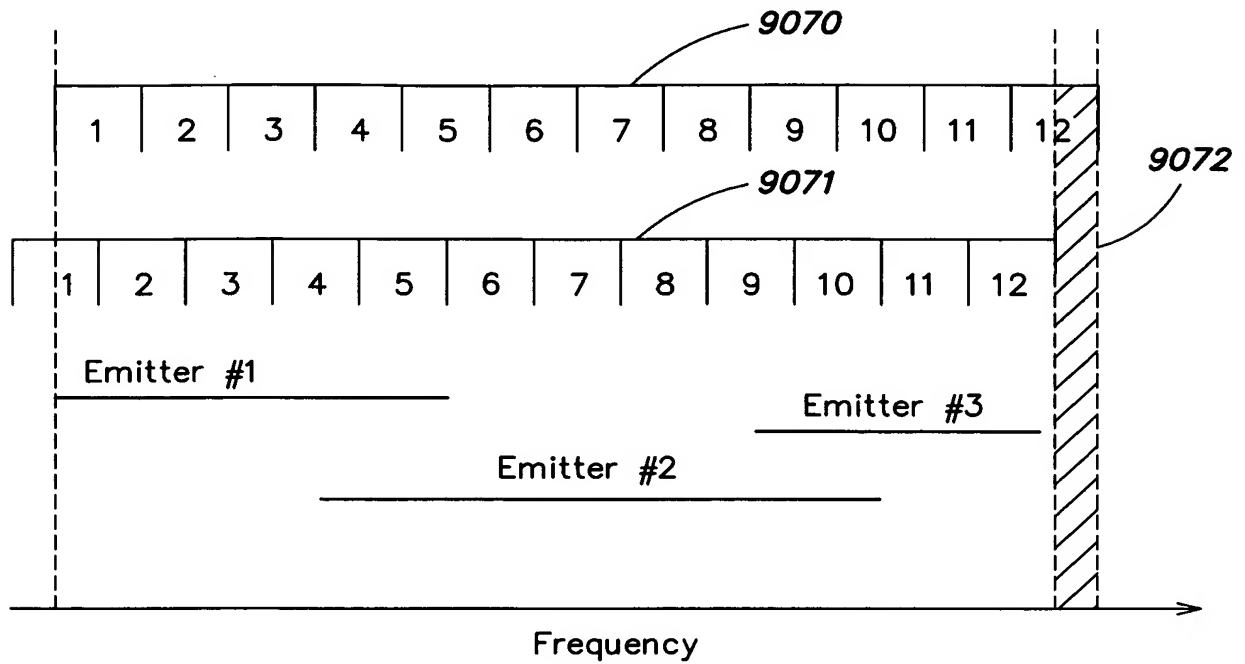
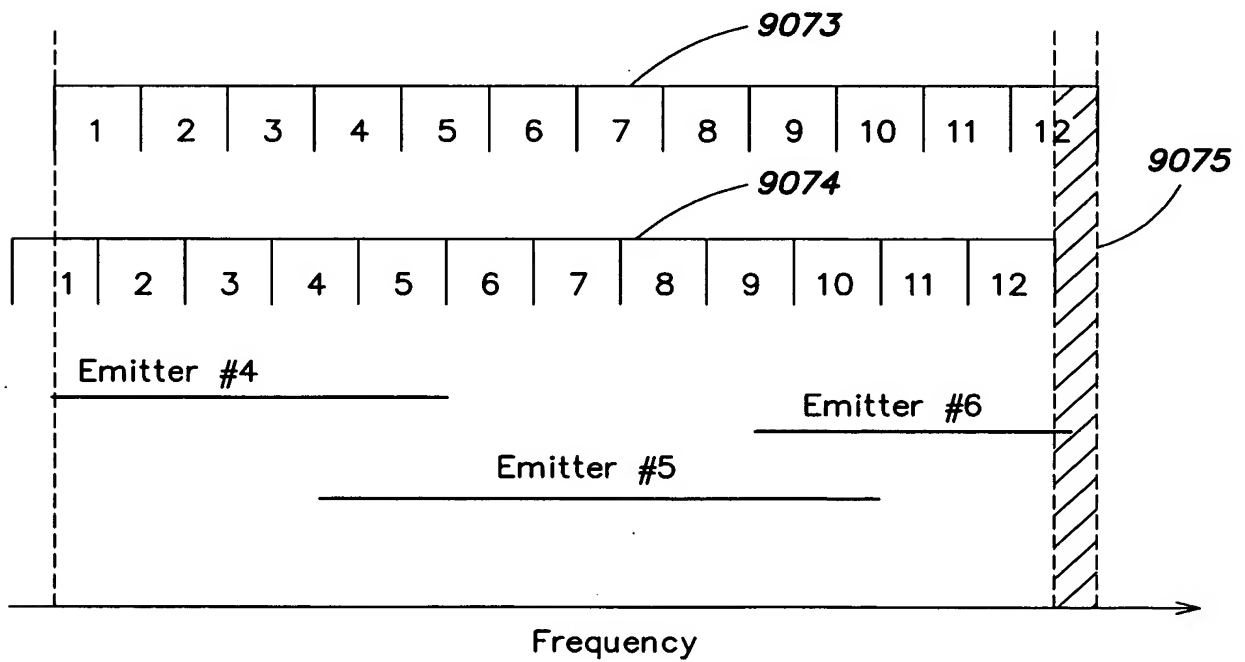


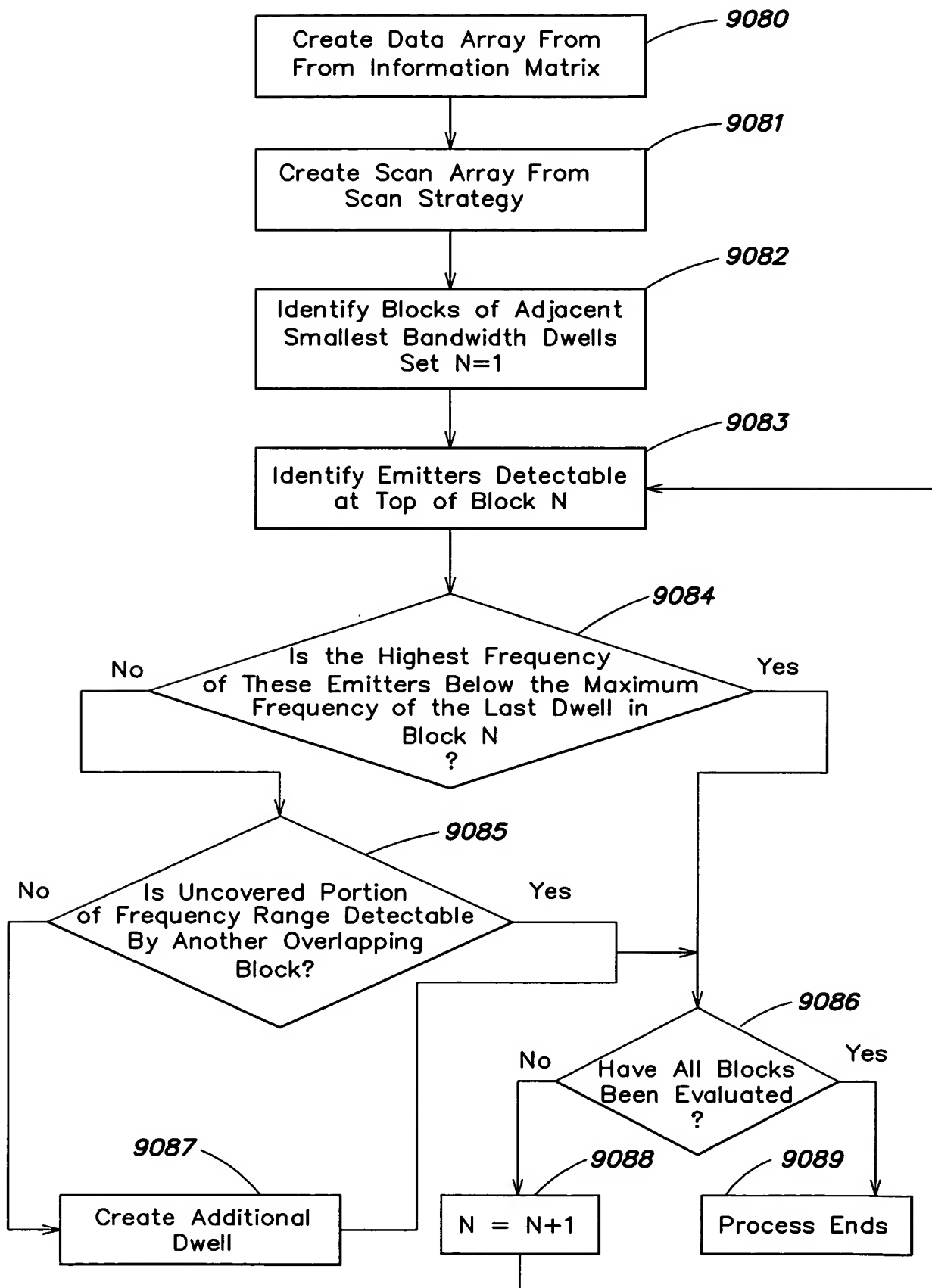
FIG. 24F



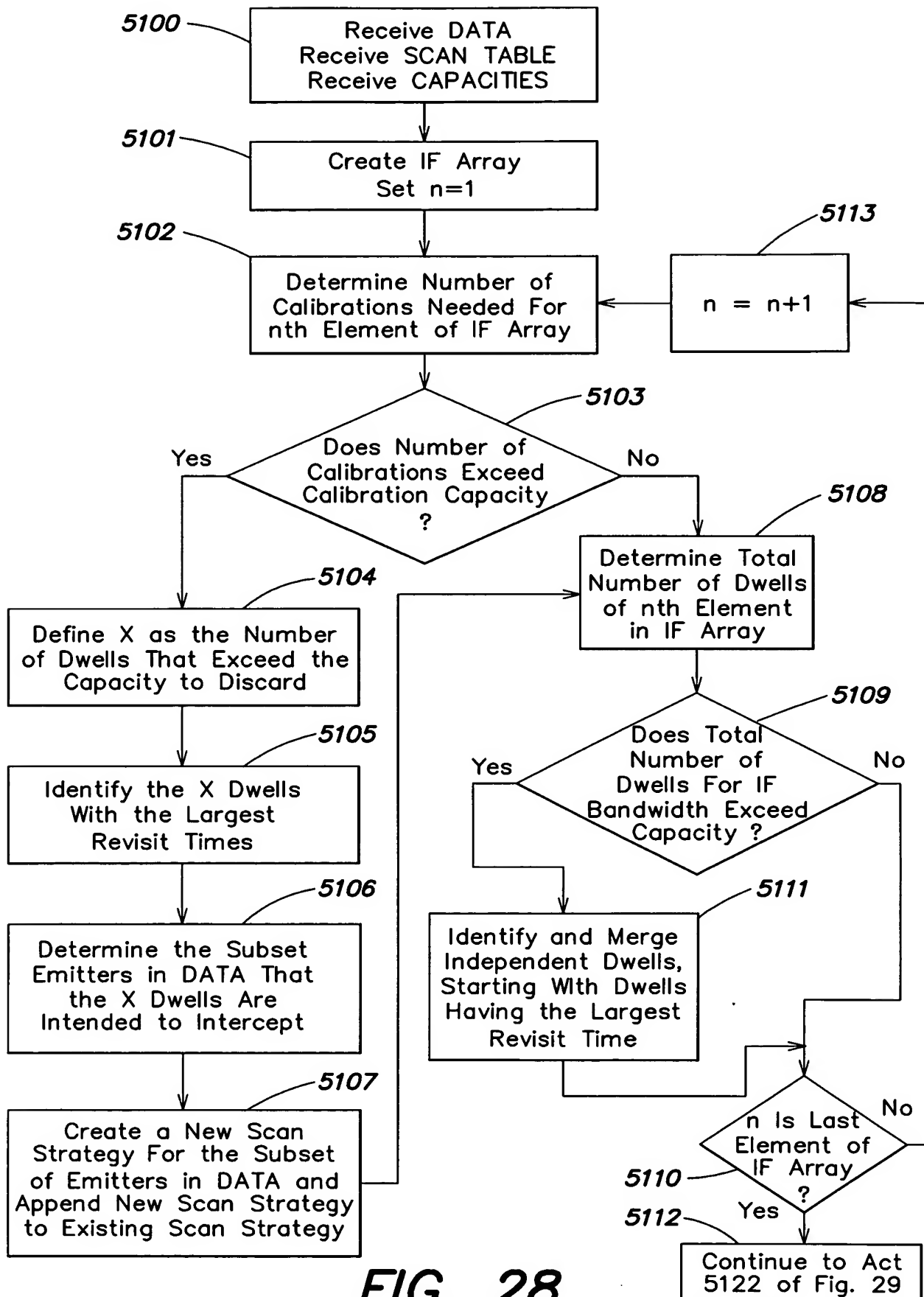
**FIG. 25**

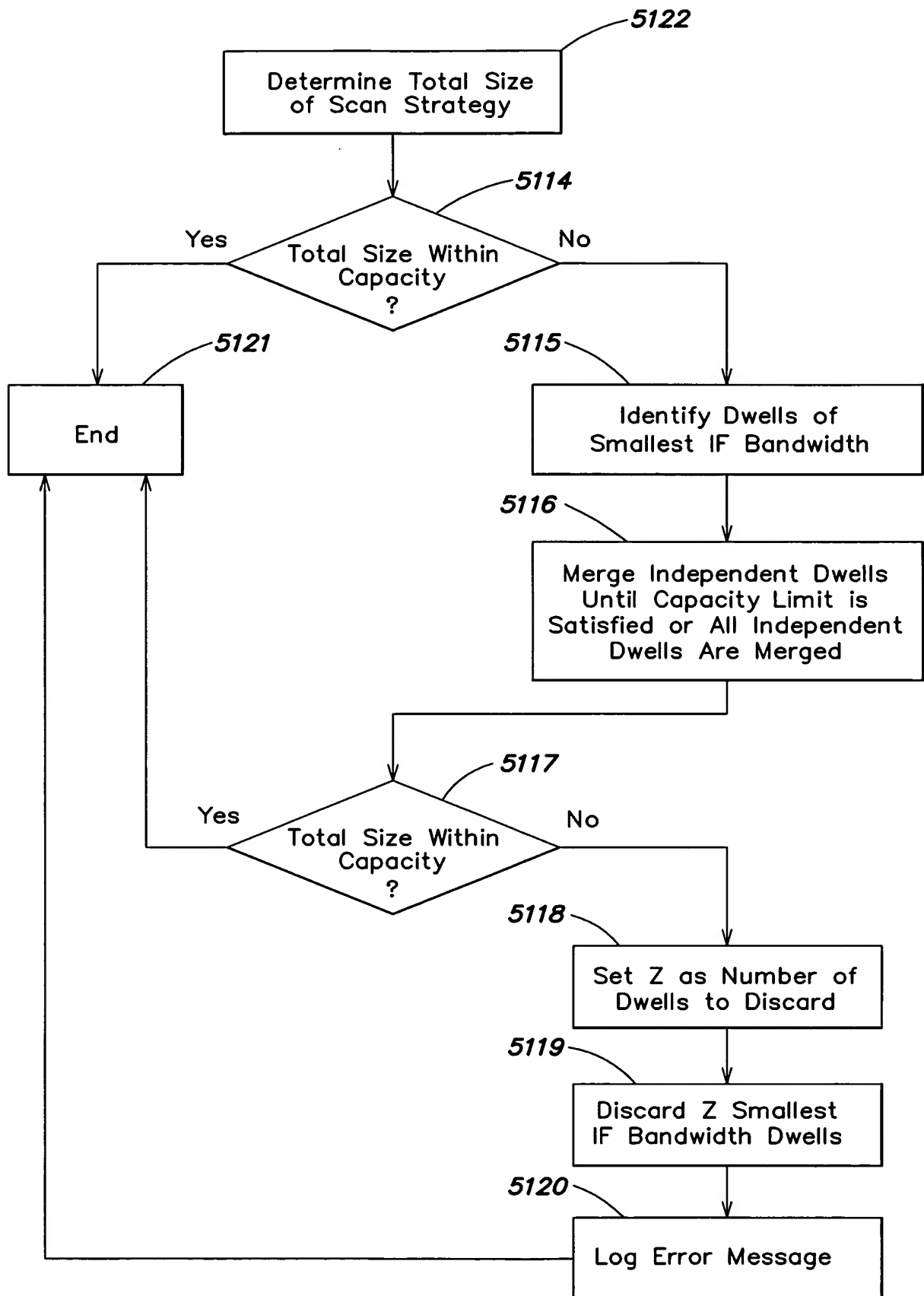


**FIG. 26**



**FIG. 27**





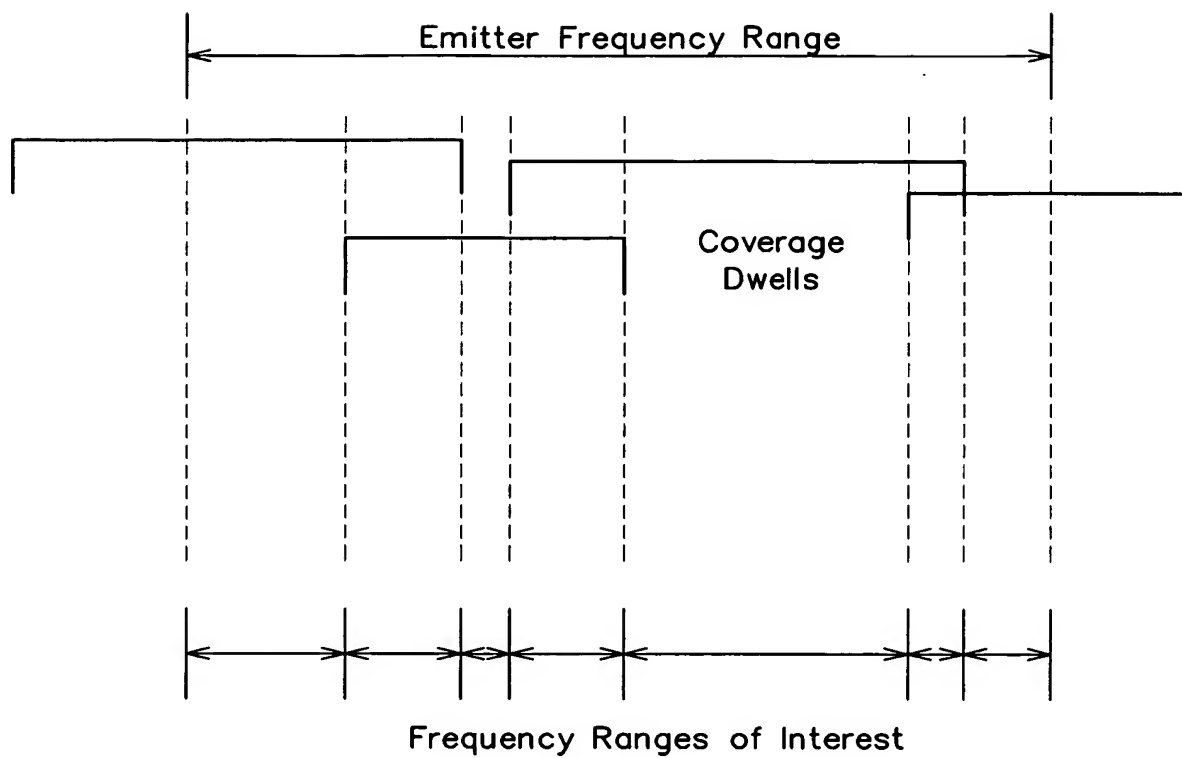
**FIG. 29**

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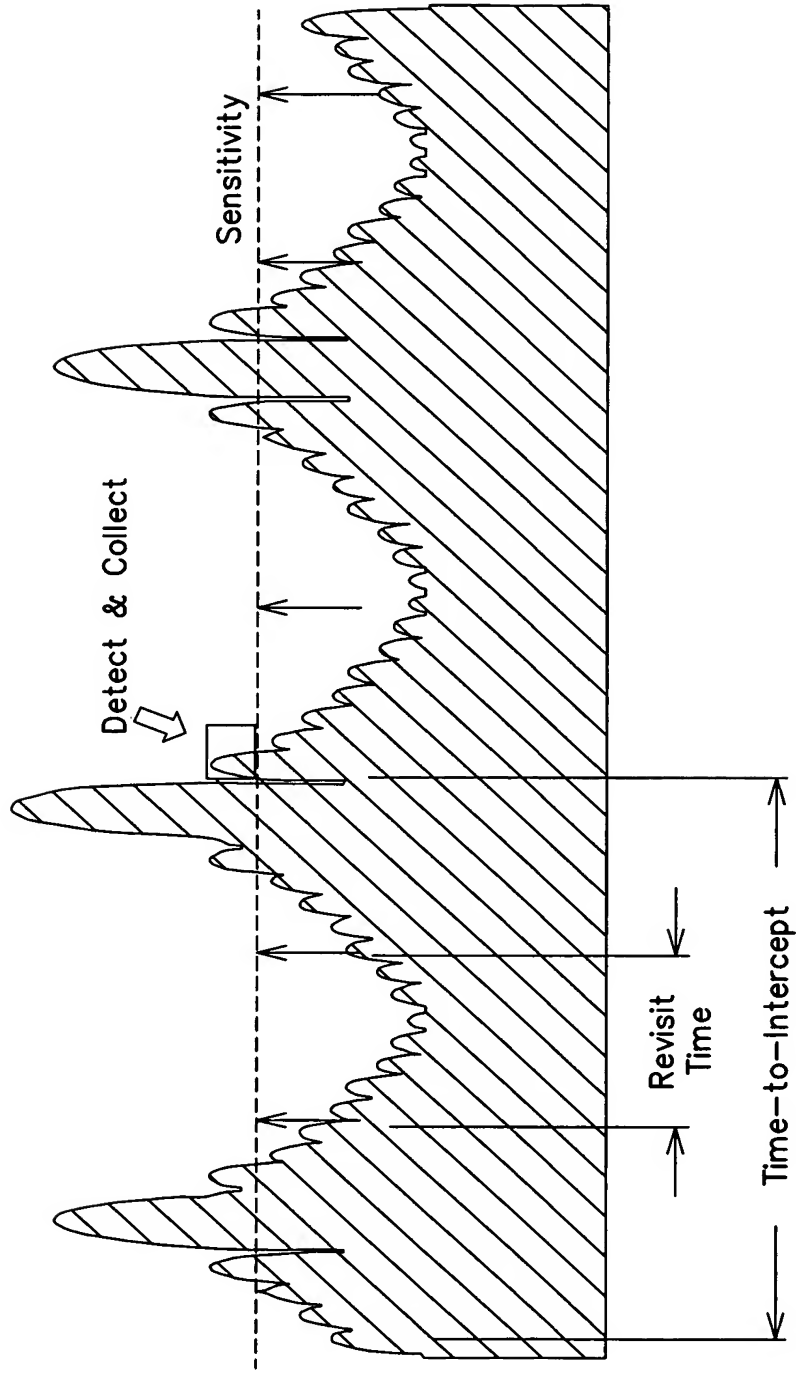
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**FIG. 30**



**FIG. 31**

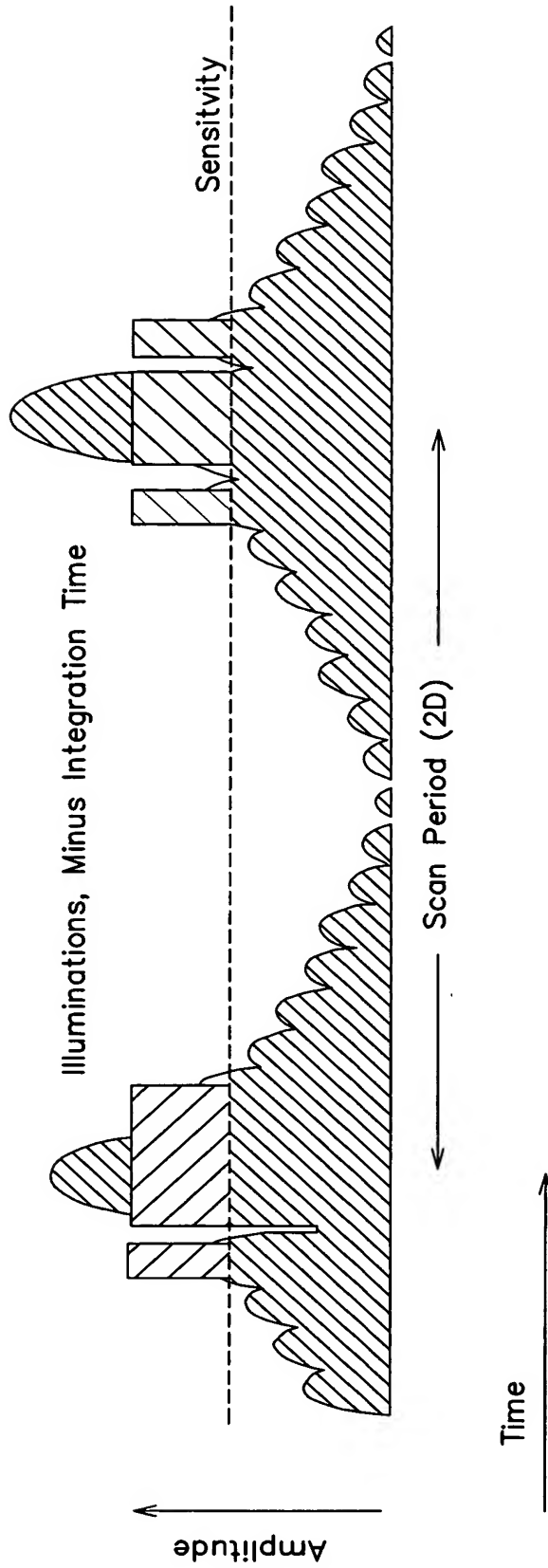


FIG. 32